

AMENDED CLAIMS

[received by the International Bureau on 28 November 2005 (28.11.05);
original claims 1-16 have been amended and replaced by claims 1-12 (pages 3)]

[1] An orthopedic implant flexible intramedullary nail (19) comprising:

a straight flexible nail of universal length being adapted in use for insertion into intramedullary canal (7) of long bones for repositioning and fixing fragments of bones having ductility of at least 15% of elongation of nail on tensile stress and at least 600 MPa ultimate tensile strength and made from stainless steel material having identical two ends (23,32) and shaft (31) where ends (23,32) are having identical blunt conical pathfinder tip (20) and said shaft and said ends (23,32) are having flexibility such that it can be bowed to any angle or curvature to adapt medullary canal and maintain relation of fragments of long bones having multiple contact points of fixation ; and

a plier-knurler cum cutter(22) in temporary use when said flexible nails(19) alone are in use comprising jaws(33) with nose (34) ,knurling surface (35) , cutting part (36) and handle part (37).

[2] An orthopedic implant flexible nail (19) of claim 1 wherein said flexible nail (19) is characterized having mechanical property of ductility as percentage of elongation of at least 15% on tensile stress and at the same time having ultimate tensile strength of at least of 600 MPa.

[3] An orthopedic implant flexible nail (19) of claim 1 wherein said flexible nail (19) is characterized having made from material like 316 L or 316 LVM stainless steel or other biocompatible material.

[4] An orthopedic implant flexible nail (19) of claim 1 wherein said flexible nail (19) is characterized having two identical said ends (23,32) where said ends are having said blunt conical pathfinder tip (20) for better gliding in medullary canal.

[5] An orthopedic implant flexible nail (19) of claim 1 wherein said plier-knurler cum cutter (22) is characterized having said nose part (34), said jaw (33) part having said knurler surface (35) to give said knurling type effect (25) to cut ends of said flexible nail and cutting part (36) to cut the said flexible nail at the distance of 1 cm

when said nose part is touching the said entry point (24) on surface of bone where said jaws are holding said flexible nail.

- 5 [6] An orthopedic implant assembly of non-interlocking intramedullary flexible nail being adapted in use for insertion into medullary canal (7) of long bones comprising:
- plurality of flexible intramedullary nail (19) as defined in claims 1, 2, 3, 4, in combination with;
- 10 proximal fixation device (27) comprising intramedullary rod (39) having shaft part (41) with plurality of longitudinal grooves (45) being deep less than diameter of one said flexible nail (19) and preferably equally spaced around the periphery of the said rod (39), the said rod having head portion (40) with internal threads (43) adaptable to said end cap (38) and temporarily adaptable to suitable targeting device, said rod is tapering to a blunt point at the distal end (42); and
- 15 an end cap (38) comprising head part with plurality of holes (48) to retain hooked cut ends (53) of said flexible nails and shaft part having external threads (44) to have final attachment with said internally threaded part (43) of said proximal fixation device (27).
- 20 [7] An orthopedic implant assembly of interlocking intramedullary flexible nail being adapted in use for insertion into medullary canal (7) of long bones comprising:
- plurality of flexible intramedullary nail (19) as defined in claims 1, 2, 3, 4 in combination with;
- 25 proximal fixation device (27) comprising intramedullary rod (39) having shaft part (41) with plurality of longitudinal grooves (45) being deep less than diameter of one said flexible nail (19) and preferably equally spaced around the periphery of the said rod (39), the said rod having head portion (40) with internal threads (43) adaptable to said end cap (38) and temporarily adaptable to suitable targeting device, said rod is tapering to a blunt point at the distal end (42) and said shaft
- 30 (41) of said proximal fixation device (27) is having plurality of holes (46) in non grooved part for interlocking screws (28); and
- an end cap (38) comprising head part with plurality of holes (48) to retain hooked cut ends (53) of said flexible nails (19) and shaft part having external threads (44)

to have final attachment with said internally threaded part (43) of said proximal fixation device (27).

- 5 [8] An orthopedic implant assembly of claim 6 & 7 wherein said proximal fixation device (27) is characterized having said intramedullary rod (39) having plurality of said longitudinal grooves where said grooves (45) being deep less than diameter of one said flexible nail and preferably equally spaced around the periphery of said rod for holding said flexible nails (19) apart from one another.
- 10 [9] An orthopedic implant assembly of claim 6 & 7 wherein said proximal fixation device (27) is characterized having said intramedullary rod (39) and an end cap (38) wherein said rod and said end cap are made from material like 316 L or 316 LVM stainless steel or other biocompatible material.
- 15 [10] An orthopedic implant assembly of claim 6 & 7 wherein said proximal fixation device (27) is characterized having said intramedullary rod (39) wherein said rod is having distal end (42) tapering to a blunt point for easy insertion into medullary canal.
- 20 [11] An orthopedic implant assembly of claim 6 & 7 wherein said end cap (38) is characterized having head part (47) with plurality of holes (48) to retain hooked cut ends (53) of said flexible nails (19) and shaft part having external threads (44) to have final attachment with said internally threaded part (43) of said proximal fixation device (27) to have proximal anchor of plural said flexible nails (19) to add
25 stability.
- [12] An orthopedic implant assembly of claim 7 wherein said proximal fixation device (27) is characterized having said intramedullary rod (39) wherein said rod is having plurality of said through holes (46) in non grooved part of said shaft part (41)
30 placed in either transverse direction or an angled direction to long axis of said shaft part of said proximal fixation device to receive said interlocking screws (28).